WHAT IS CLAIMED

1. A method of making at least one resistor, the method comprising:

providing a sacrificial layer having a first surface and one or more pads including at least one electrically conductive material disposed over at least one region of said first surface;

depositing a resistive material over said pads and over said first surface of said sacrificial layer to thereby form at least one unit including said resistive material and said one or more pads;

removing at least a portion of said sacrificial layer to expose said one or more pads.

2. The method as claimed in claim 1, wherein a plurality of resistors is manufactured simultaneously using a single sacrificial layer, the method further comprising separating at least some of said resistors after at least a portion of the sacrificial layer has been removed.

3. The method as claimed in claim 2, wherein said step of separating at least some of said resistors includes subdividing at least one of said units.

4. The method as claimed in claim 1, wherein said step of providing said sacrificial layer and said pads includes depositing said at least one conductive material onto said first surface of said sacrificial layer.

5. The method as claimed in claim 4, wherein said step of providing said sacrificial layer and said pads includes providing cavities in said first surface of said sacrificial layer and said step of depositing said conductive material includes depositing said at least one conductive material into said cavities.

6. The method as claimed in claim 5 wherein said step of providing said cavities in said first surface includes providing an apertured layer on said first surface and etching said first surface through the apertures in said apertured layer.

7. The method as claimed in claim [redacted] wherein said apertured layer is comprised of an etch resistant material.

8. The method as claimed in claim 7 wherein said step of providing an apertured layer includes :

disposing a patternable layer on said first surface of said sacrificial layer; and

patterning said patternable layer to form apertures therein.

9. The method as claimed in claim 8, wherein said patternable layer is comprised of a photoresist.

10. The method as claimed in claim 5, further comprising removing at least a portion of said apertured layer from said first surface of said sacrificial layer.

11. The method as claimed in claim 10, wherein all of said apertured layer is removed from said first surface of said sacrificial layer.

12. The method as claimed in claim 10, wherein only a portion of said patternable layer is removed from said first surface of said sacrificial layer.

13. The method as claimed in claim 5, wherein said step of depositing said at least one conductive material into said cavities includes depositing a first conductive material into said cavities and then depositing a second conductive material in said cavities of said sacrificial layer.

14. The method as claimed in claim 1, wherein said step of removing at least a portion of the sacrificial layer includes etching the sacrificial layer.

15. The method as claimed in claim 1, wherein each said pad is elongated.

16. The method as claimed in claim 1, wherein each said pad includes a post and at least one flange wider than the post portion.

17. The method as claimed in claim 16, wherein each said pad has a rivet-like shape including a pair of flanges at opposite ends of the post.

18. The method as claimed in claim 16 wherein said step of depositing said resistive material is performed so as to embed one flange and at least a part of the post of each pad in the resistive material while leaving at least part of the other flange of each pad exposed at a surface of said resistive material.

19. The method as claimed in claim 16, further comprising providing an apertured layer on said first surface of said sacrificial layer before depositing said at least one conductive material, said step of depositing said at least one conductive material including depositing conductive material in the apertures of said apertured layer to form the posts of said pads and depositing conductive material on a surface of said apertured layer remote from said sacrificial layer to form top flanges of said pads, the method further comprising removing at least a portion of said apertured layer from said first surface of said sacrificial layer prior to depositing said resistive material so as to leave the posts and top flanges of said pads projecting from said sacrificial layer.

20. The method as claimed in claim 1 wherein said sacrificial layer includes a dielectric defining said first surface, the method further comprising the step of disposing a seed layer on said first surface of said sacrificial layer, said step of depositing at least one conductive material including the step of plating conductive material onto said seed layer.

21. The method as claimed in claim 20, further comprising the step of at least partially removing said seed layer from each said unit during or after the step of removing said sacrificial layer.

22. The method as claimed in claim 1, further comprising removing excess resistive material from each said unit using a bulk trimming process.

23. The method as claimed in claim 1, further comprising providing a heat sink having a first surface wherein said resistive material forms a resistive layer having a first surface

and a second surface, wherein said first surface of said resistive layer is connected to said first surface of said heat sink.

24. The method as claimed in claim 1, further comprising before depositing said resistive material, providing an insulating layer having a first surface and a second surface, wherein said resistive material is deposited between said second surface of said insulating layer and said first surface of said sacrificial layer.

25. The method as claimed in claim 24, wherein a plurality of resistors are manufactured simultaneously using a single sacrificial layer and a common insulating layer, the method further comprising separating at least some of said resistors from one another after removing at least a portion of the sacrificial layer, wherein said separated resistors remain connected to said insulating layer.

26. The method as claimed in claim 1, further comprising trimming said resistive material in at least one said unit to control the resistive value of said resistive material.

27. The method as claimed in claim 1, wherein said step of removing at least a portion of said sacrificial layer includes separating said sacrificial layer from said at least one unit while leaving said sacrificial layer intact.

28. The method as claimed in claim 27 wherein said sacrificial layer is comprised of stainless steel.

29. A method of making at least one resistor, the method comprising:

providing a sacrificial layer having a first surface and a plurality of cavities in the first surface of said sacrificial layer;

depositing one or more conductive materials within said cavities to form conductive pads within said cavities ;

disposing resistive material over the first surface of the sacrificial layer and the pads to thereby form one or more units; and

removing at least a portion of said sacrificial layer to expose said pads.

30. The method of claim 29 wherein said step of depositing one or more conductive materials is performed so as to form said pads as hollow shells within said cavities, and wherein said step of disposing resistive material includes applying said resistive material into said hollow shells.

31. The method as claimed in claim 29, wherein a plurality of resistors are manufactured simultaneously using the same sacrificial layer, the method further comprising a step of separating at least some of the resistors after at least a portion of the sacrificial layer has been removed.

32. The method as claimed in claim 29, further comprising subdividing one said unit to provide a plurality of individual resistors.

33. The method as claimed in claim 29, further comprising disposing an apertured layer on said first surface of said sacrificial layer, said step of providing said sacrificial layer including etching said sacrificial layer through said apertures to form said cavities.

34. The method as claimed in claim 33 wherein said step of providing said apertured layer includes disposing a patternable layer on the first surface of said sacrificial layer and patterning said patternable layer to form said apertures.

35. The method as claimed in claim 33, further comprising removing at least a portion of said apertured layer from said first surface of the sacrificial layer before depositing said resistive material.

36. The method as claimed in claim 35, wherein all of said patternable layer is removed from the first surface of the sacrificial layer before depositing said resistive material.

37. The method as claimed in claim 29, further comprising before depositing said resistive material, providing an insulating layer having a first surface and a second surface, wherein said resistive material is deposited between said second surface of said insulating layer and said first surface of said sacrificial layer.

38. A method of making at least one resistor, the method comprising:

providing a sacrificial layer having a first surface and a second surface;

depositing resistive material over said first surface of said sacrificial layer so that said resistive material adheres to said sacrificial layer; and

selectively removing portions of said sacrificial layer to form one or more pads connected to said resistive material.

39. A method as claimed in claim 38 wherein said first surface of said sacrificial layer is rough, and the roughness of said first surface promotes adhesion between said sacrificial layer and said resistive material.

40. The method as claimed in claim 38, further comprising the step of providing an etch-resistant material on said second surface of said sacrificial layer at locations where the pads are to be formed, said step of selectively removing portions of said sacrificial layer including exposing said second surface, with said etch-resistant material disposed thereon, to an etchant which attacks said sacrificial layer but which does not substantially attack said etch-resistant material.

41. The method as claimed in claim 40, wherein said etch-resistant material is electrically conductive and said etch-resistant material is incorporated in said pads.

42. The method as claimed in claim 38, further comprising before depositing said resistive material, providing an insulating layer having a first surface and a second surface, wherein said resistive material is deposited between said second

surface of said insulating layer and said first surface of said sacrificial layer.

43. An electrical resistor comprising a unitary mass of an electrically resistive material and a plurality of electrically conductive pads exposed at a bottom surface of said mass, at least one of said pads being a flanged pad including a post and a top flange remote from said bottom surface embedded in said resistive material, said top flange being wider than said post, said post extending from said top flange towards said bottom surface.

44. A resistor as claimed in claim 43 wherein each said flanged pad includes a bottom flange wider than said post, said bottom flange being exposed at said bottom surface.

45. A resistor as claimed in claim 44 wherein each said bottom flange has a top surface bearing on the bottom surface of said mass.

46. A resistor as claimed in claim 43 wherein said plurality of pads includes at least three pads, and wherein said resistor has a first resistance between a first pair of said pads and a second resistance different from said first resistance between a second pair of said pads.

47. An electrical resistor comprising a unitary mass of an electrically resistive material and a plurality of electrically conductive pads exposed at a bottom surface of said mass, at least one of said pads being a hollow shell pad having interior and exterior surfaces, said unitary mass of resistive material including projections extending into each said hollow shell pad and abutting the interior surface thereof.

48. A component including a plurality of electrical resistors, each said resistor including a unitary mass of resistive material having top and bottom surfaces and a plurality of electrically conductive pads exposed at such bottom surface, the component further comprising a common insulating layer overlying and adhering to said top surfaces of said resistors.